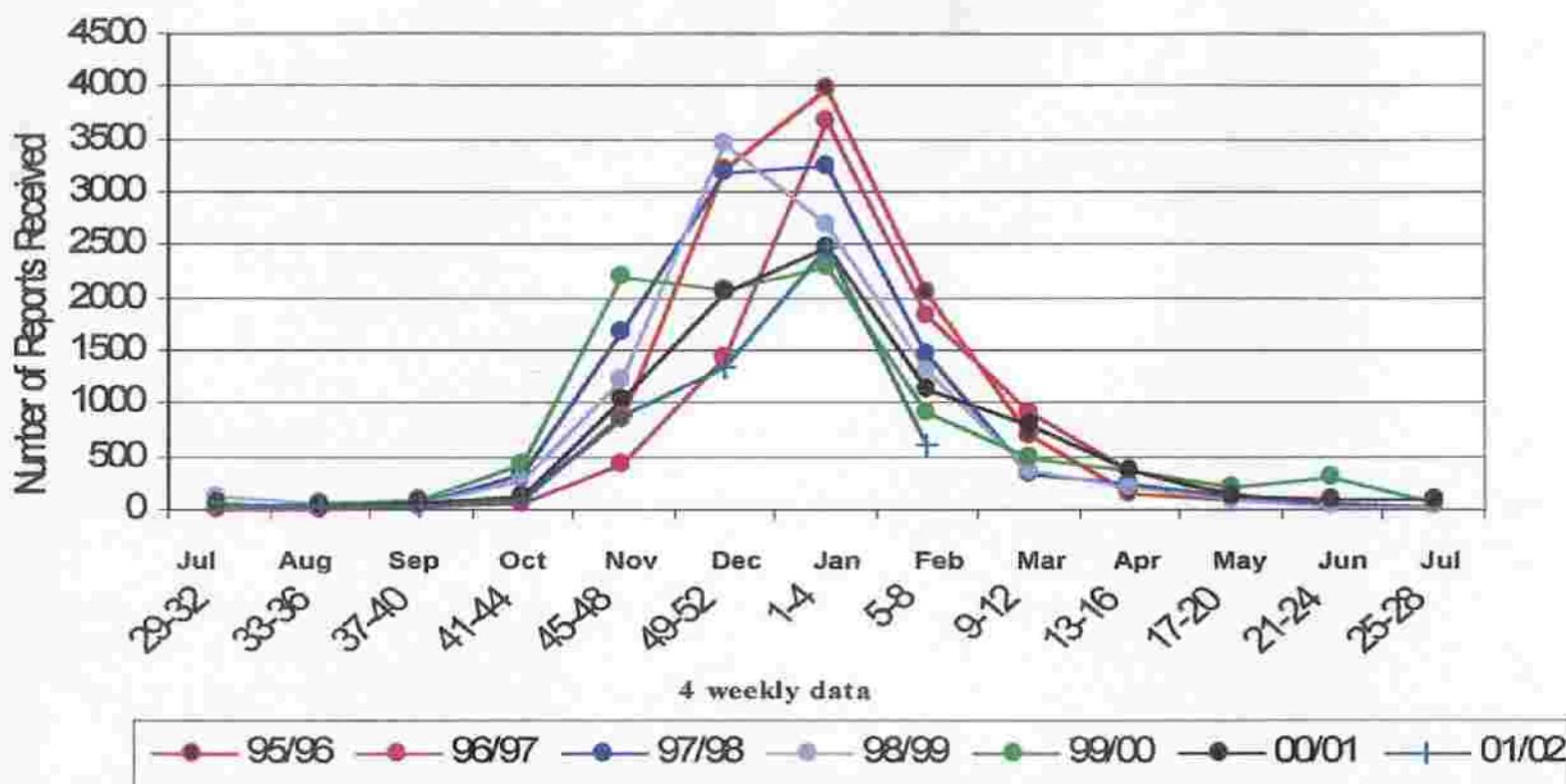




Acute Respiratory Problems

Bronchiolitis

RSV Season¹
Public Health laboratory Service (PHLS) Data



RSV

- All children exposed by 2 years of age
- On first exposure - URTI -- acute bronchiolitis
- Natural immunity not fully protective
- Recurrent infections - URTI
- Spread -- large fomite
- WASH YOUR HANDS

Preventative strategies

- Stop smoke exposure
- Avoid crowded living conditions
- Avoid URTI carriers
- Spread – large fomite – therefore WASH HANDS
- Avoid sharing toys

Preventative strategies

- Palivizamab
- Passive immunisation strategy
- Monthly im injections in season
- Decreases RSV hospitalisation in at risk groups
- Cost £3530/case
- NNT 17 – 22 ie £60000-£77000 to avoid 1 admission

Treatment

- Supportive only
- OXYGEN
- No evidence to support any of the other multiple drug therapies which have been tried.
 - Who to refer
- Ex preterm still < 3months
- Hypoxic/ working very hard
- Poor feeding – only after little and often has been tried

Early life respiratory viral infections, atopic sensitisation, and
risk of subsequent development of persistent asthma
Kusel MM et al JAllergy Clin Immunol 2007

- 198 children high atopic risk followed from birth to 5 years
- All episodes RTI in 1st year postnasal aspirates for viruses
- History wheeze and asthma collected annually
- Atopy assessed 6/12, 2 y and 5 years

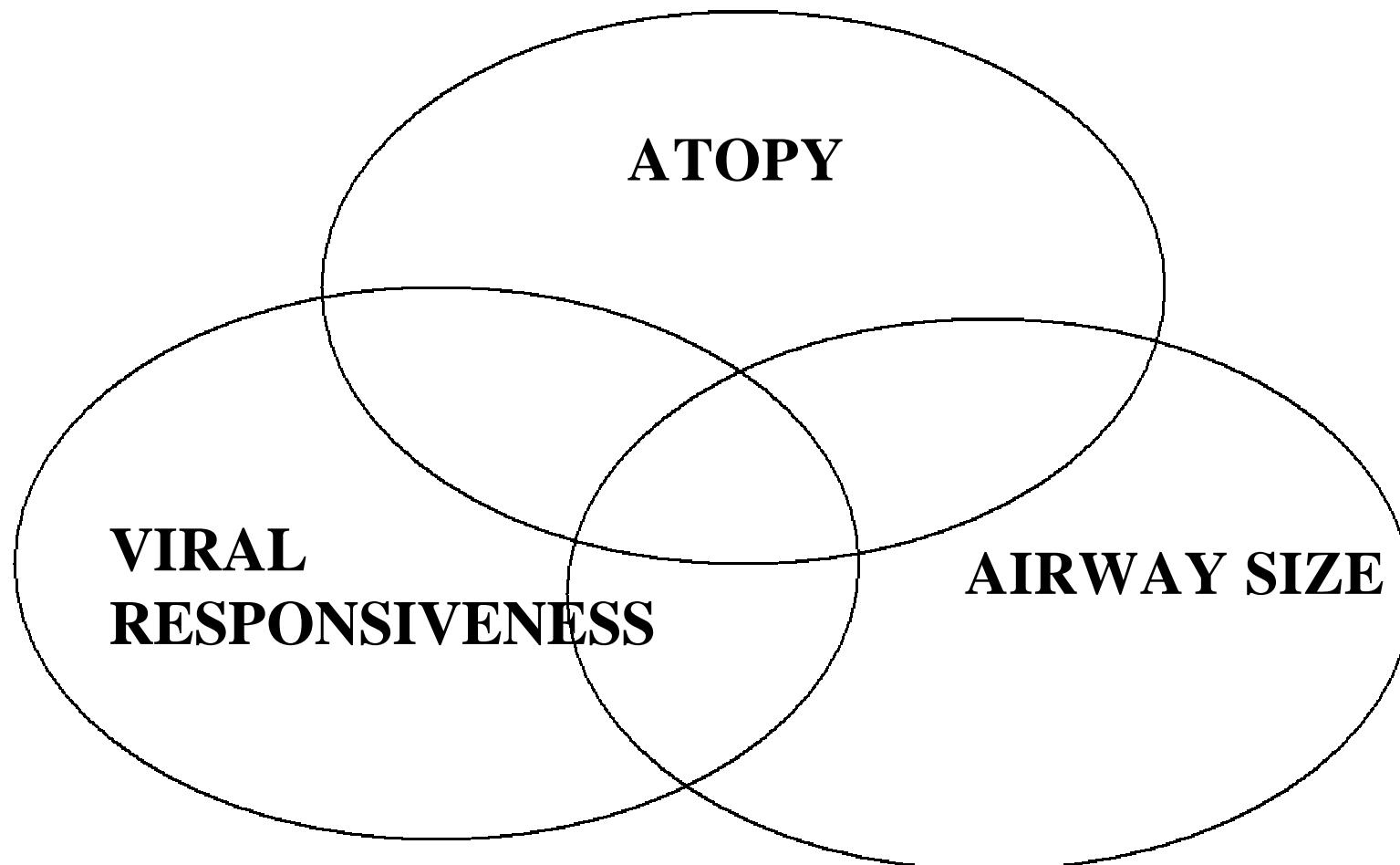
Results

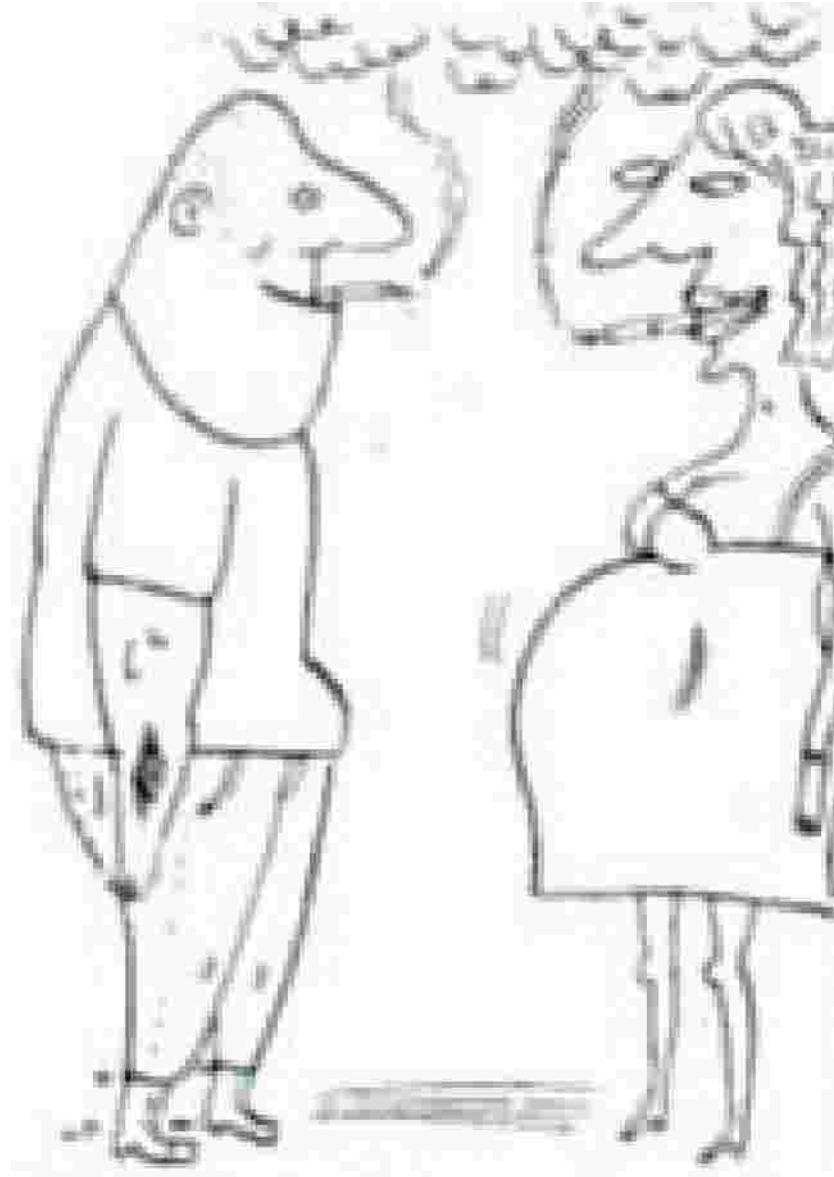
- 815 episodes RTI; 33% LRTI
- Viruses in 69% - rhinovirus 48%; RSV 11%
- At age 5 years
 - 28% had current wheeze
 - assoc wheezy and/or febrile LRI (OR 3.9; 1.4-10.5)
 - esp Rhinovirus or RSV (OR 4.1 ;1.3-12.6)
- BUT only in those atopic </=2years

Suggests

- Viral infections interact with atopy in infancy to promote later asthma
- (maximum risk in narrow developmental window)
- Could ‘protection’ of ‘high-risk’ children against LRI in infancy be effective in primary asthma prevention??

Infant wheeze





There - I
definitely
felt it
cough

Wheeze

- Acute treatment
- Salbutamol – always first choice drug independent of age
- Prednisolone





Two phenotypes of wheezing in preschool years

- with distinct natural history.
- Frequent wheezing in the first 3 years of life with risk factors for asthma (e.g., eczema, maternal asthma) predicts symptoms in older age,
- infrequent viral-associated wheezing without risk factors for asthma has a benign prognosis.

Frequent wheezing with risk factors for asthma

- Maintenance inhaled corticosteroids can control symptoms in children with frequent wheezing associated with risk factors for asthma
- Does not affect long term natural history

Short course montelukast for intermittent asthma in childhood.

- Children aged 2-14yrs
- Intermittent asthma; no symptoms between episodes; 3-6 episodes in past 12months
- N=220 Montelukast or placebo
- Start of each URTI for at least 7/7 or till symptoms settled
- 681 episodes (345 Mont; 336 placebo) in 202 patients

Results

- Unscheduled health care resource utilisation
M 163 vs P 228
- OR 0.65 (0.47-0.89)
- Symptoms ↓ 14%; Nights awake ↓ 8.3%
- Days off school/childcare ↓ 37%
- Parents days off work ↓ 33% (p<0.0001)

Who did it work for?

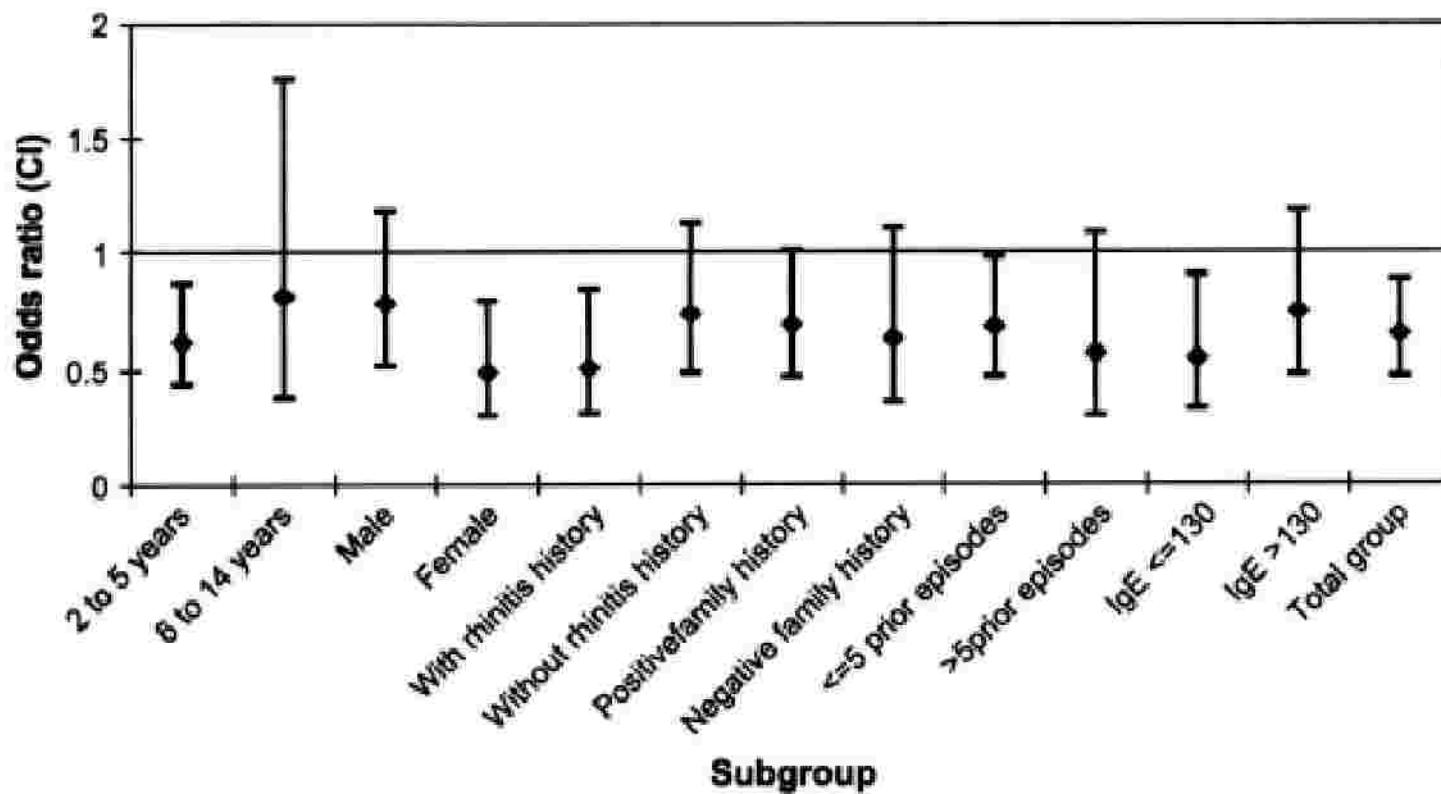
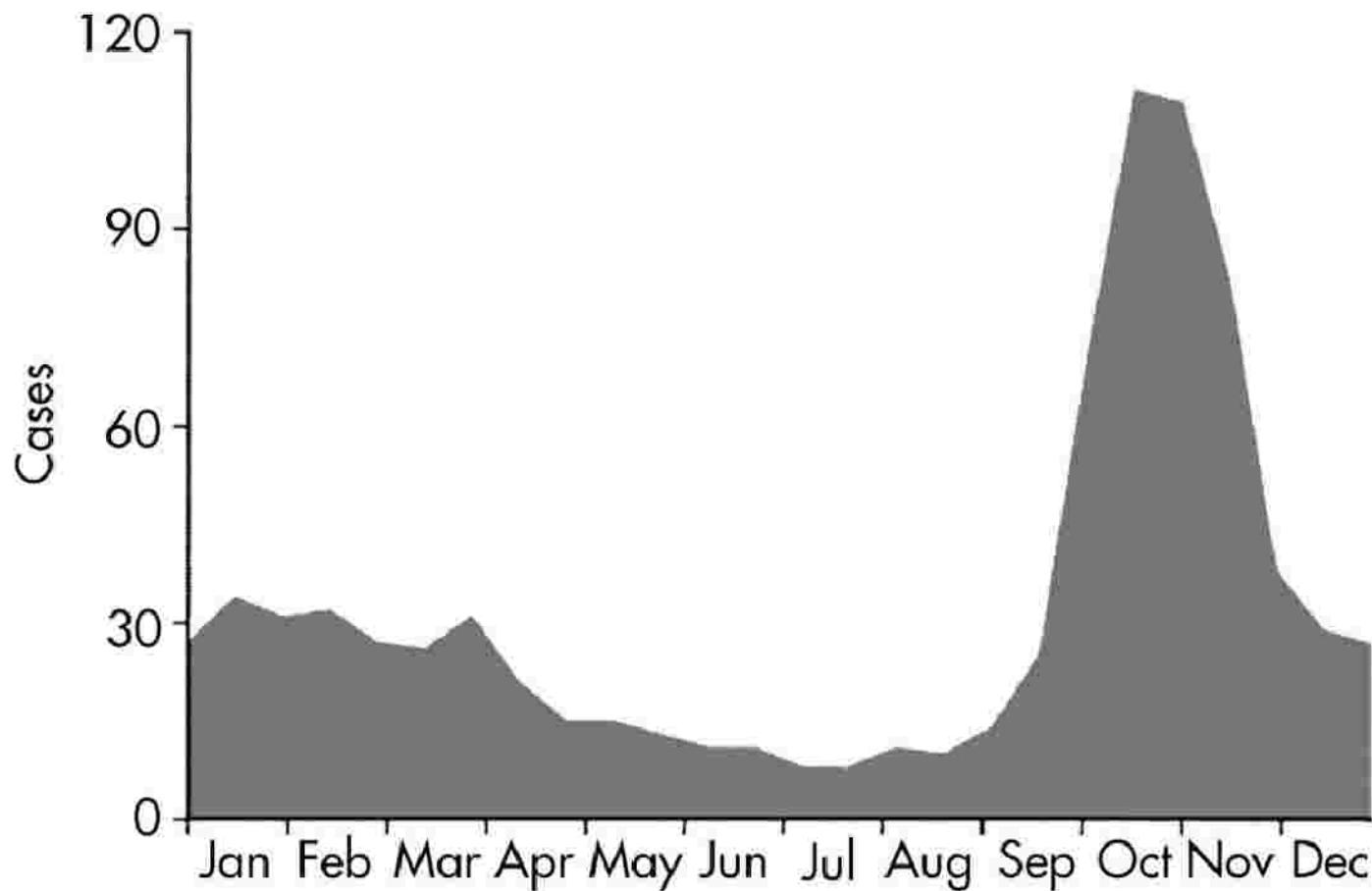


Figure 2. Subgroup analysis of primary end point, proportion of episodes treated that required health resource utilization.

Stridor

Croup Seasonality



Refer

- Significant stridor at rest with recession
- High fever $> 38.5^{\circ}\text{C}$, looks toxic
- Hypoxia – unusual in croup and sign of very severe disease
- Drooling, unable to swallow

Differential diagnosis

- Viral croup
- Bacterial tracheitis
- Foreign body
- Epiglottitis



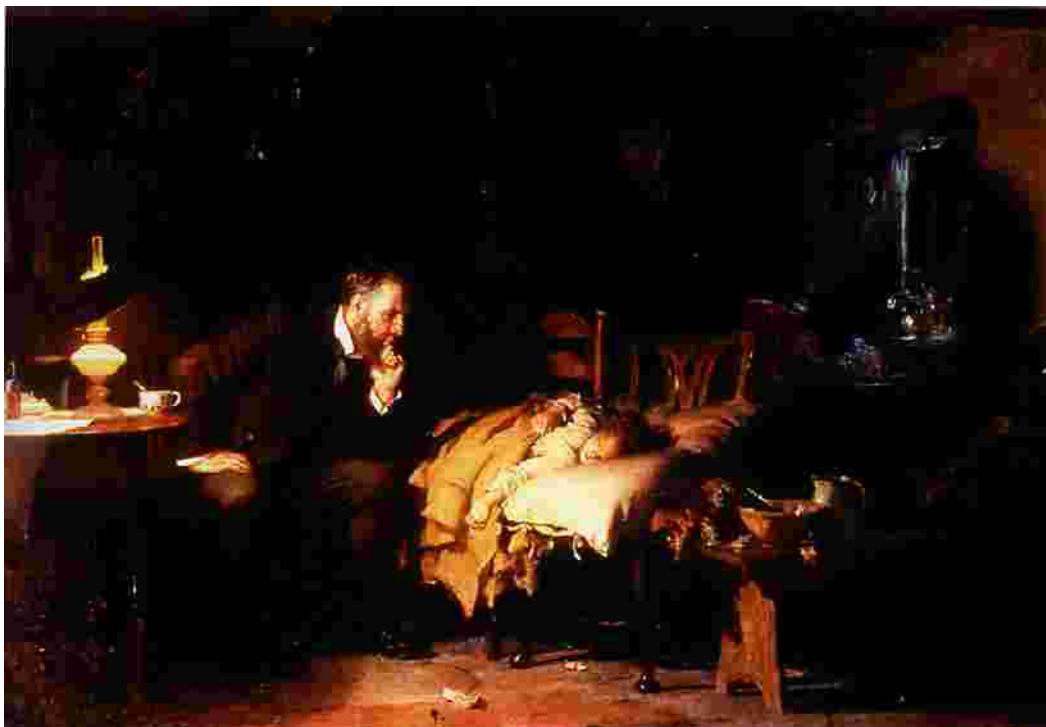
Treatment



- Oral Dexamethasone
or
- Prednisolone
- Review
- Nebulised adrenaline

Pneumonia

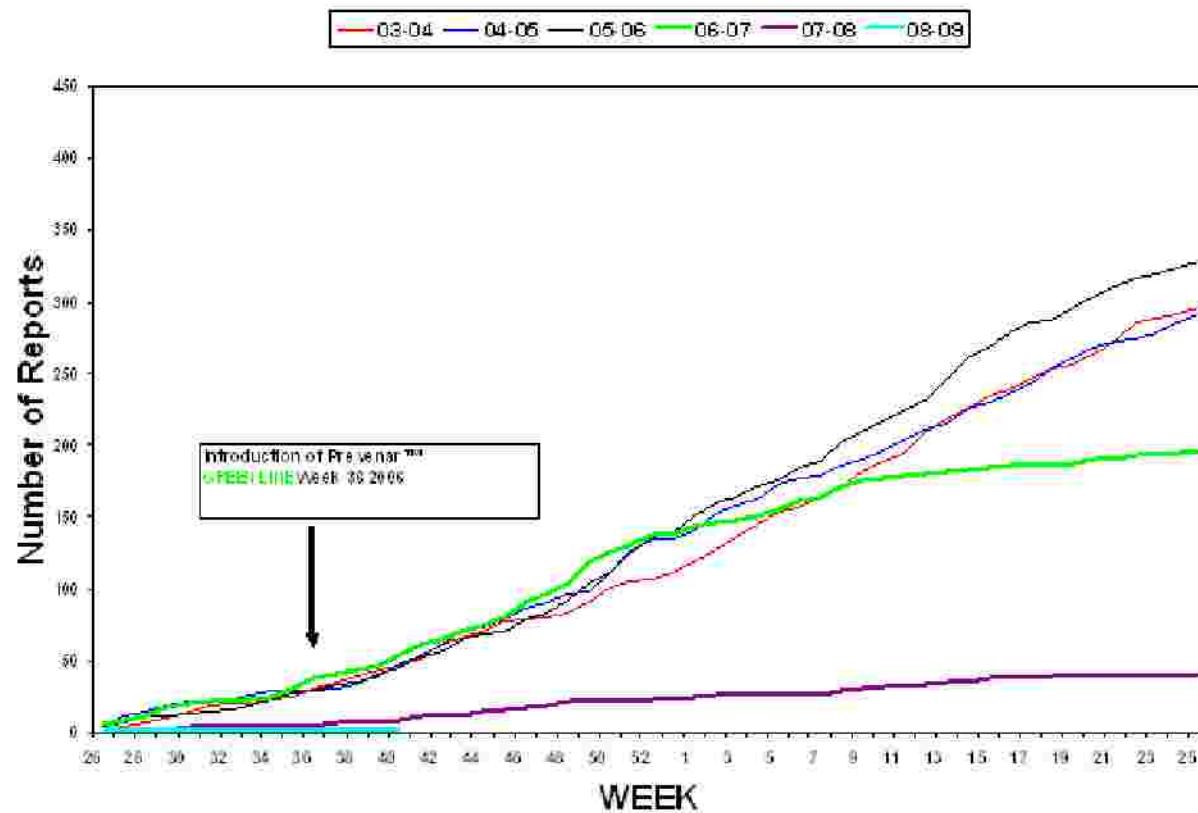
- Bacterial pneumonia
- **should be considered when there is fever $>38.5^{\circ}\text{C}$ along with chest recession and respiratory rate $>50/\text{minute}$ (B).**
- **If wheeze is present in young children a primary bacterial pneumonia is very unlikely (B).**



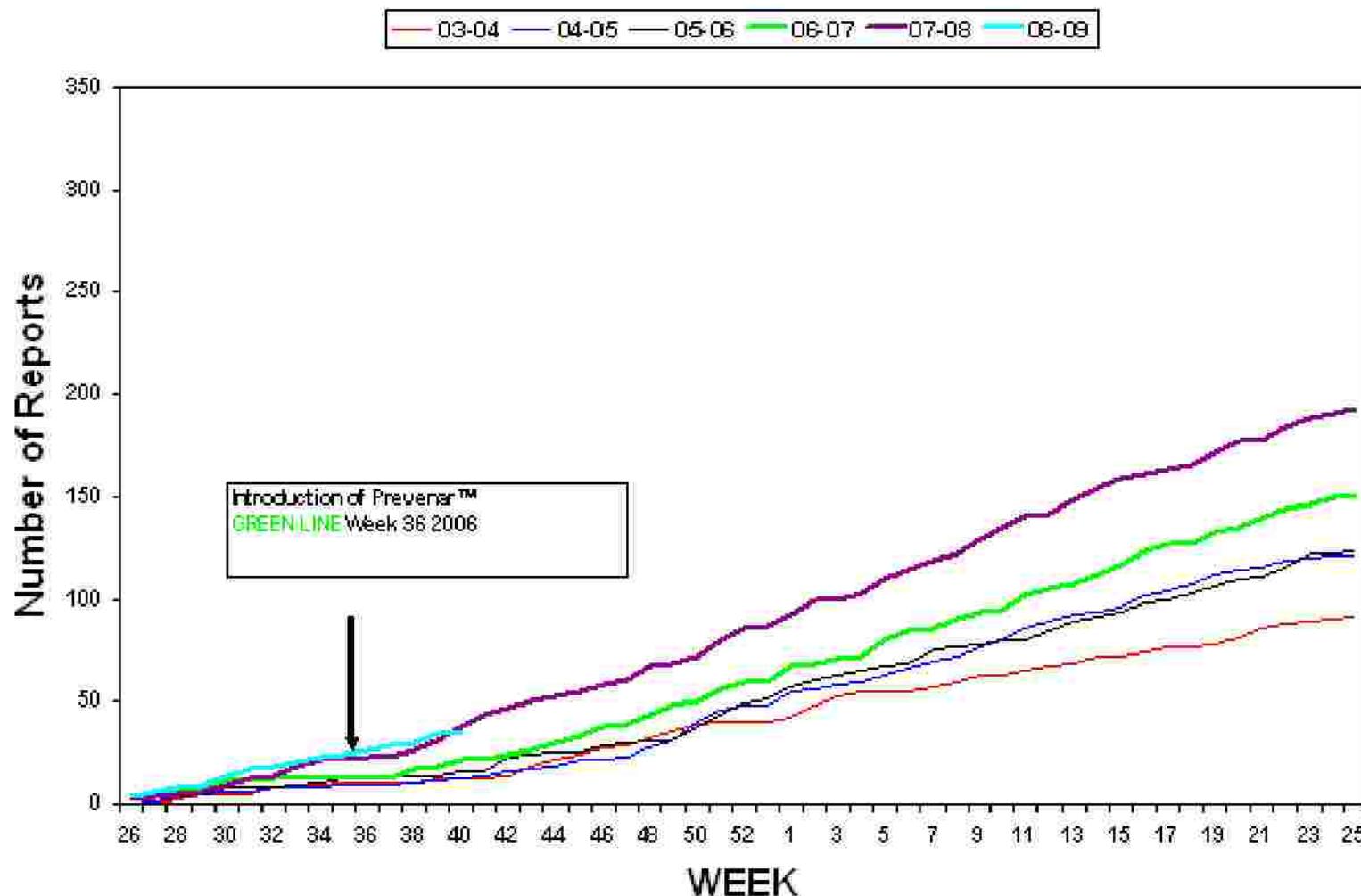
Epidemiology and treatment

- *Streptococcal pneumoniae* is by far the commonest bacterial cause at all ages.
- Amoxicillin is treatment of choice

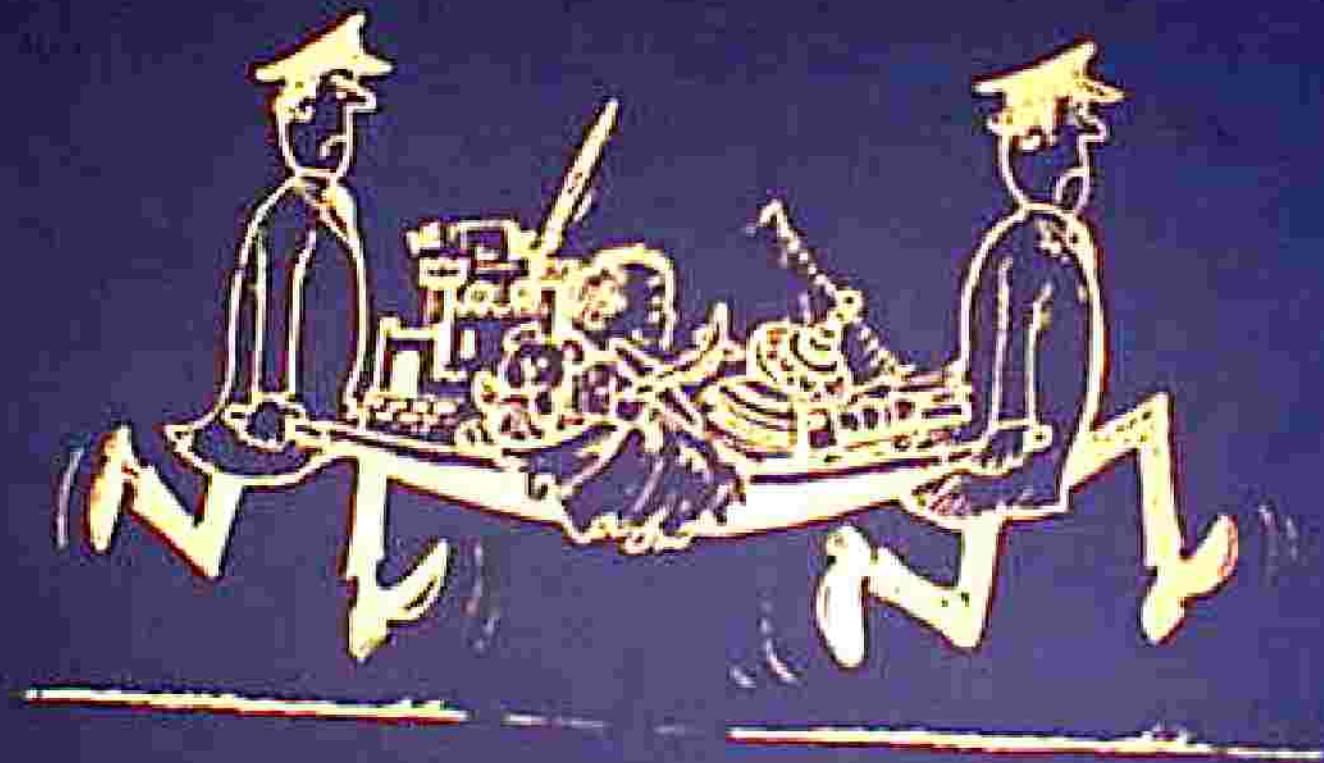
Invasive pneumococcal disease – prevenar serotypes



Invasive pneumococcal disease non prevenar serotypes



CHILDREN'S WARD



Admission Criteria

- toxic appearance
- severe respiratory distress
- clinical evidence of dehydration
- vomiting
- HYPOXAEMIA



Oral or intravenous antibiotic?

- A randomised controlled equivalence trial to compare oral and intravenous treatment in children with community acquired pneumonia :PIVOT trial

M.Atkinson et al Arch Dis Child 2005;90(suppl II):A87

Oral or intravenous antibiotic?

- Entry criteria
 - Respiratory signs and symptoms
 - Temp >37.5
 - Radiological evidence pneumonia
- Primary outcome
 - time to temperature $< 38C$ for 24 hours and no oxygen requirement

Oral or intravenous antibiotic?

- N= 252
- 120 treatment iv benzyl penicillin
- 126 treatment oral amoxicillin

Results

Median time temp < 38 C

- 1.31 days iv group vs 1.34 days oral
- Median length hospital stay
 - 2.1 days iv group vs 1.77 days oral group
($p<0.001$)
- Complications
 - No difference

Change of practice ?

- Trying but not always succeeding!

